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XIII.—*Narrative of M. MIDDENDORF's Journey in Northern Siberia.* Communicated by Admiral VON KRUSENSTERN, Hon. Mem. R.G.S. Translated by the Editor.

IN the spring of 1843, M. Middendorf commenced his preparations for exploring a region almost wholly unknown, and the knowledge of which is most interesting to science on many accounts; and having now returned from his most enterprising and dangerous journey, he has addressed a report of his proceedings to the Academy of Sciences of St. Petersburg, from which, and from a memoir drawn up by Prof. K. E. Von Baer of the Imperial Academy, the following abstract has been made:—

By the 23rd of March, 1843, the intrepid traveller was prepared to leave Touroukhansk for the north; but before we accompany him in his perilous undertaking, it will be well to premise a word or two on the objects of his expedition, and on the motives which induced the Academy to prescribe to M. Middendorf the exploration of the regions to the north of Touroukhansk, and to proceed, either by the Piassina or the Khatanga rivers, to the shores of the Frozen Ocean.

All that vast region which extends, on the right bank of the Yénisséï, from the Lower TOUNGOUZKA to the sea coast, was almost unknown. Some notions, though perhaps not very exact, existed of the geographical conformation of the coast; but no one—no European at least—had yet penetrated into the interior of the country; and even the greater part of the sea coast had been visited only in the winter. The Empress Anne had sent different maritime expeditions. Thus, in 1735, Prontchistcheff, a lieutenant of the imperial navy, had started in a light vessel from the mouth of the Lena, and followed the coast westward to beyond the point where the Khatanga disembogues into the Frozen Ocean, without, however, having been able to double Cape Taimyr, although he reached 77° 29' N. latitude. Retracing his way back, on the approach of winter, he was unable to reach the Lena, and those who survived of his crew were compelled to winter near the mouth of the Olenek; the commander of the expedition, together with his wife, who accompanied him, had fallen victims to the rigour of the climate before this port was reached. The Admiralty, nevertheless, did not abandon the hope of being able, by similar expeditions, to obtain a complete knowledge of these inhospitable shores; and, in 1739, Lieut. Khariton Laptieff was despatched with instructions to direct his course from the mouth of the Lena towards Cape Taimyr. The first year this gallant sailor, overtaken, like his predecessor, by the bad season, was obliged to winter at the mouth of the Khatanga. The next year, hemmed in by the ice, he with difficulty escaped from his ship, which he was forced to abandon:

he remained, nevertheless, with admirable perseverance, in these dreadful deserts till 1743, occupied, together with his officers, whenever the ice and snow favoured their progress, in mapping the coast. The summer was passed at Touroukhansk, to which place they went by ascending the Khatanga. Even Cape Taimyr, the most northern point of the continent, was reached, as it appears, by one of Laptieff's subalterns, without its having been possible, however, to fix its geographical position, the state of the atmosphere not admitting of astronomical observations. Another officer of the expedition, also in the winter, visited Lake Taimyr, to the west of the promontory of the same name. There ended the labours of these travellers. We are still without an accurate chart of the coast from Cape Taimyr, westward, as far as the mouth of the Piassina, and, until the exploration of M. Middendorf, absolutely nothing was known of the nature of the country in question: we had no knowledge of its climate or its productions; we were even totally ignorant of the latitude at which, in these regions, the forests terminate, and the degree at which nature ceases to produce isolated trees.

Nevertheless, it was important, in many respects, to have correct notions of the climate and natural productions of these regions. Thanks to the labours of Tréviranus, Humboldt, Ritter, and other philosophers, the researches into the influence of what may be designated the physical conditions of life in the development of organization, and its dispersion over the surface of the earth, have, in our days, given increased interest to the natural sciences.

An exact comparison of the soil and productions of various regions, situated under different latitudes, can alone furnish the means of extending our knowledge of this subject, and enlighten us on the means employed by nature to call into being organic life, to maintain it, and to develop it with greater or less energy. For a long period, Lapland, often visited since the time of Linnæus, had been considered as representing unity, or the starting-point, if we may so express ourselves, in the scale of such comparisons. More lately, however, regions still more sterile and situated under much higher latitudes have been explored—thanks more especially to the perseverance of the English; yet little beyond the shores of these countries have been subjected to scientific examination. Never until now has it been possible to explore the interior of any great continent extending further north than Lapland. Notwithstanding this, the progress which has recently been made in the study of climatology has made us acquainted with the influence of the neighbourhood of the sea, and of the relative position of the land with regard to it, as forming its eastern or western boundary.

In order to that bringing together of fact which is contemplated

by science, and to establish a more solid basis of comparison—to determine a state of nature which may be regarded as unity, in the sense previously alluded to—it appeared necessary to explore the interior of the continent in that part of it where it extends farthest to the north, without being exposed to the influence of the vicinity of the sea. These conditions were presented by the region on the right bank of the Yénisséï, beyond the Lower Tougouzka—the region, in fact, which M. Middendorf was instructed by the Academy to penetrate.

The task imposed upon this traveller was so much the more difficult, as he would have to traverse the deserts in summer, in order to study their nature and their productions. In winter, provisions may be kept a long time without spoiling; and, provided there be a sufficient number of draught cattle, it is easy to transport upon sledges a large quantity of them, and of the wood necessary for cooking. The summer, so short in these polar regions, does not offer the same facilities; but young, intrepid, with a good constitution, and possessed of medical skill—a sailor by dint of experience acquired in a former voyage, and so good a sportsman that his gun might be regarded as an unfailing resource for provisioning the expedition—M. Middendorf was well formed for surmounting all the difficulties he could not fail to encounter in his journey.

The expedition left Touroukhansk on the 23rd of March, and, proceeding on the frozen surface of the Yénisséï, soon arrived at Doudina, in latitude 69° . The provisions and baggage, including nails, cordage, sails, &c., necessary for the construction of a boat, as also the instruments, were transported on eight sledges, first drawn by dogs, and subsequently by reindeer belonging to the Ostiaks and Samoyedes, who successively relieved each other along the route. A week's sojourn at Doudina sufficed for laying in a stock of biscuit; and the Dolganes and Tongouses, who were to conduct the expedition over the Toundra, or marshy plains, which extend to beyond the Piassina, having arrived, it was necessary to proceed, although two of the men who had accompanied M. Middendorf had fallen ill. In making any longer stay the expedition would have run the risk of not finding the Samoyedes, the nomadic inhabitants of the region beyond the Piassina, in their winter quarters; and although the thermometer fell on the 1st of April so low as 30° of Réaumur below the freezing point, M. Middendorf determined upon taking the two sick men along with him in a kind of box made of reindeer-hides, and placed upon a sledge; and he had reason to rejoice that he had done so, in spite of the hazards of the experiment, for by his care the sick recovered during the journey. Transported with rapidity from one Samoyede camp to another, crossing the Toundra

in a N.N.E. direction, they first ascended the Doudypta, which falls into the Piassina; they next entered the basin of the Khatanga, and, on Easter-day, arrived at the banks of the Boganida, a tributary of the Khéta, which is an affluent of the Khatanga, where they had to remain some time.

The surrounding country offered less resources than they had hoped; a Dolgane, celebrated among his countrymen for his immense wealth, consisting in herds of reindeer, and on whose assistance they had chiefly reckoned, was already gone, as is the custom in summer, to a part of the Toundra further to the north. A tribe of Samoyedes, which was still in its winter camp, could afford no assistance; and what rendered matters worse, every one belonging to the expedition, with the exception of M. Middendorf and his travelling companion M. Branth, had fallen ill, being seized with a kind of measles, which very soon disabled every one from working. So situated, M. Middendorf considered himself fortunate in finding on the borders of the Boganida, in lat. $71^{\circ} 5'$, a little settlement, known by the name of Philipoff's winter-hut, consisting of four uninhabited log-huts, which might afford shelter to the sick.

At this place M. Branth commenced his meteorological observations, which were to be regularly carried on here for some time; while M. Middendorf started in a sledge for the Khatanga, down which river he intended to proceed in the summer, according to his instructions, as far as the Frozen Ocean. Arrived at a Russian village, consisting of a few huts grouped round a church, in lat. $72^{\circ} 2'$ (one degree farther north than it is placed on the maps), he soon learnt the truth of what had been told him at Krasnojarsk and at Touroukhansk, that there was no kind of craft on the Khatanga, except a few very small boats, which could in no way serve for a voyage of any length.* The stunted trees of the forest, whose farthest extremity extended to this spot, were quite unfit for the construction of even a boat, and in other respects also the aspect of the country, particularly at this time, was equally discouraging. Two chiefs of the Yakouts and Dolganes, with whom M. Middendorf entered into communication, were so much the less able to assist him as a dreadful epidemic—the same disease, in fact, with which his own companions were seized—was extending its ravages more and more along the Khatanga. In more than one winter habitation M. Middendorf found all the inhabitants, without exception, a prey to the attacks of the malady, without possibility of relief, and without a single member of the

* A little way below this village M. Middendorf found the wreck of Laptieff's boat—its state of preservation, after having been exposed under the 73rd parallel of latitude, to all the inclemency of the weather for more than a century, afforded sufficient proof of the excellent quality of the larch timber of the banks of the Lena.

family being able to light a fire, or bring water to his friends, dying of thirst. This circumstance, in particular, seemed to render quite hopeless the idea that the voyage by the Khatanga could possibly succeed, and pointed out the necessity of seeking some other route by which to arrive at the sea coast.

On his return to the Boganida, M. Middendorf found his people so far recovered as to be able to work. They accordingly set-to, and having discovered, with considerable difficulty, some trees fit for their purpose, situated at a day's journey to the south, they began the construction of a boat of 12 feet keel. Not a single one of the Russians who accompanied M. Middendorf had the slightest idea of such an operation, so that on this occasion he was not only obliged to have recourse to his technical knowledge, but, with hatchet in hand, to take an active part in the labour.

During a sojourn of a few weeks, M. Middendorf was himself enabled to judge of the extreme poverty of these regions, and of the great scarcity of animals; while the accounts given by the Samoyedes of the plains further north, where there scarcely existed a trace of organic life, were truly appalling. It would evidently be impossible to complete the collection of the natural productions of the country during a painful and dangerous journey, when the attention of the travellers would be occupied by so many other objects, and when their utmost efforts would hardly be sufficient to enable them to overcome the obstacles which the nature of the country would oppose to their progress. M. Middendorf accordingly decided upon dividing his people into two parties, one of which was to remain, under the direction of M. Branth, on the borders of the Boganida, in order to collect objects of natural history, and to continue the meteorological observations; whilst the other, immediately under himself, would endeavour to reach the sea.

Some Samoyedes of the tribe of Assia, with whom they had entered into communication, declared that they were, together with the rich Dolgane already mentioned, the sole inhabitants of the immense territory forming the most northerly part of the country between the Piassina and the Khatanga; that in the spring they regularly went northward as far as the borders of the Taimyr, but never further, because beyond that point the sterile soil ceased to produce even that species of moss which formed the food of the reindeer, the only wealth of these nomadic people. The Dolgane, who had been sent for, having arrived, M. Middendorf resolved to accompany these people as far as the Taimyr, and then, by embarking on this river, to endeavour to reach the sea. It was agreed that they should meet the Samoyedes again on the 9th of May, on the banks of the Novaia, in the Toundra. A

student of the corps of topographical engineers joined the expedition at the moment of its departure. The skeleton of the boat being completed, it was put upon a sledge and, accompanied by the topographer and three other strong and brave men, the traveller started on the 7th of May towards the north. With great regret he found himself obliged to take into these regions, where the means of transport are so scarce, a train of 68 reindeer, yoked to eight sledges, three of which were loaded with firewood.

Almost immediately they felt the sad effects of the fatal epidemic, which for the present rendered all their efforts to penetrate into the country doubly difficult. In order to have a sufficient number of men to attend to the reindeer, they had been obliged to collect several from the distant borders of the Kheta, and a Tongout, who was to serve them as guide, having fallen ill, could not follow the expedition.

Arrived on the 9th of May on the banks of a stream, they thought they had reached the Novaia, whilst in fact they were still distant from it a day's journey; but the Samoyede Assias, whom they expected to meet here, were not to be found, and it was not till after a search of three days that four of their tents were discovered in these deserts, covered with snow. Faithful to their promise, the tribe had dragged themselves forward to meet the travellers, although they were seized with that dreadful malady which had already destroyed a great portion of the meagre population of these countries. M. Middendorf no longer found in these tents the men whom he had known on the Boganida, who were then the chiefs of the people: they had all died, and of 35 individuals who were left, one only was well, and another could barely, upon urgent necessity, leave his bed for a few minutes—the remainder appeared doomed. Fortunately the traveller, provided with a few medicines, was enabled to apply the resources of his art, and attach these people to him by the bonds of gratitude, a circumstance which subsequently proved of great advantage. In the mean time he was himself a sufferer by the distress of the tribe: the Samoyede women, who had engaged to make fur coverings for the tents, were unable to work, and the travellers were in consequence exposed (from the 15th to the 18th of May), in a tent but half-covered, to a cold of 18 degrees below 0 of Réaumur's scale, and to a violent tempest.

On the 19th they were enabled to proceed, arrested more than once in their progress by storms, after which the sledges could only be found by digging for them in the snow, which completely buried them. It was not till the 28th of May that the party reached the Logata, an affluent of the Taimyr, where the rich Dolgane awaited to transport them to the banks of the river on which they were to embark. The thaw having commenced,

rendered this part of the journey doubly harassing. A great number of reindeer sunk under the fatigue before the end of the journey, and when the Taimyr was reached (on the 2nd of June), although still at a great distance from the point where this river falls into the lake of the same name, the Dolgane thought proper to abandon them.

From a hill on the right bank of the river, M. Middendorf saw at a great distance on the other side, and extending east and west, a chain of mountains which bounded the horizon in that direction, and was therefore able to judge how very erroneous are the maps which we possess of these regions, and that they do not correspond with Laptieff's journal of his expedition. According to these maps the Lake Taimyr has only insignificant affluents, and the river of the same name is but the outlet of the lake; whilst in reality this river is imposing by the volume of its waters even far above the point where it enters the lake, which it traverses in its western part.

The first object of the travellers was to complete the construction of their boat, although they had nothing for its lining but the planks which formed the bottom of the sledges. A few excursions to points at various distances served to give them a notion of the country. Meanwhile the river rose by degrees, increased by the melting of the snows, and on the 23rd of June (O.S.) it was quite free of ice. By this time also the boat was ready; the days had been almost always rainy, and they had therefore worked principally at night, or rather during those hours which correspond to the night at this season, but during which the sun never sets in these high latitudes; and it was during a bright midnight sunshine that the boat, constructed with so much perseverance, and completed in spite of so many difficulties, was at last launched on St. John's day, under the 74th parallel of north latitude.

After having completed as far as possible in this place the collection of objects of natural history, and having returned from a little preliminary expedition, undertaken for the double purpose of exercising the crew and of approaching, by means of an affluent of the Taimyr, the mountains which had been seen in the distance, in order to examine them geognostically, the travellers embarked on the 4th of July, with the intention of descending the stream down to the sea. A single man was left at the place of departure to attend to the fishing during the season, and thus prepare fresh provisions for the expedition on its return.

Very soon, however, M. Middendorf was obliged to stop, and even to return. Two Samoyedes, who were descending the stream, having met with the expedition the second day, gave such information as deprived the travellers of all hopes of reaching the sea with a single load of provisions such as their boat could carry. It

therefore became necessary to establish somewhere on the banks of the river a *dépôt* of provisions, buried in the earth to secure them from accident, and to have besides at least one cargo complete at the moment they should begin the passage of the lake. However unfortunate the loss of time, they were obliged to descend and re-ascend the stream several times for the transport of the fish and provisions to the spot chosen for the *dépôt*.

On the tongue of land not far from where the river falls into the lake, and which they had descried from the summit of some neighbouring hills, they met with some people for the last time; these were Assia Samoyedes, and from them they learnt that the kind of promontory which advances into the river, that is several verstes wide, was the furthest northern point visited regularly by the tribe—none of them, nor any living being, had been beyond. All they could say of the river higher up, seemed like a vague and forgotten tradition; nevertheless, the assertion that further on, the navigation was rendered impossible by the rapids and falls that intercept the course of the river, deserved some attention.

M. Middendorf, thinking he recognised some of the localities pointed out in the journal of Laptieff, judged that he was not more than 150 verstes from the sea. A large quantity of provisions (150 salmon) were, together with the winter clothing of the people, buried at this place. The boat was loaded, as also a canoe bought of the Samoyedes, and which was taken in tow. Time passed on: but whatever may have been the impatience of the travellers, it was still impossible to start—impossible to struggle against the wind, which for many days in succession blew from the north with great violence. It was in vain that they tried to take advantage of a momentary calm on the 23rd of July, in order to advance by dint of rowing. Three days after, notwithstanding their efforts, they found themselves again cast upon that fatal tongue of land—the tempest, more violent than ever, having again raised the waves of the lake and of the stream. From the 27th of July, however, the travellers were enabled to continue their voyage towards the north, although slowly, for they were still frequently obliged to seek refuge in some inlet against the violence of the weather, and not till they had traversed the lake could they hope to be no longer impeded in their progress. Below the lake the river intersects the chain of mountains which extends, as it appears, in a line parallel with the coast. Where the river cuts the chain, it is confined between high rocky precipices, often presenting the strangest forms: in this part of its course it is more sheltered from the wind, and even when this was contrary, the boat was less affected by it, being hurried on rapidly by the velocity of the current toward their so much desired goal.

But other dangers, which would have driven back the most intrepid, now threatened the expedition. The provisions, with which the boat was laden on leaving the tongue of land where the *depôt* was established, were now nearly all consumed; and although they did not cease fishing during the whole time, they scarcely obtained anything. They were obliged to halt for a whole day (the 2nd of August) in what seemed a favourable spot. Whilst his companions cast their nets, M. Middendorf, his gun under his arm, climbed up the rocky banks in the hope of being able to kill some straggling reindeer; but this sacrifice of time, when every hour was precious, was wholly useless; for, after a whole day's labour, they succeeded in taking only three little fish, and some reindeer which M. Middendorf had seen, had run off before he could approach within gun-shot of them.

As they advanced, they continued to flatter themselves that they would see the sea from the summit of the rocks; but this hope was often deceived. On the 6th of August, towards the close of the day, they reached a spacious cavern, in which they passed the night. It was perhaps the same mentioned by Laptieff in his journal, in which case they would only be fifty-two verstes from the sea. This idea inspired the crew with fresh courage, and M. Middendorf resolved on persisting in his enterprise, notwithstanding the extremity to which the expedition was reduced. On the 4th of August he had divided among his people what biscuit remained, and having no longer any bread, and being also without wood, they were compelled to eat alone and raw what little fish they succeeded in taking. Such was the situation of the travellers, when the snow, which fell on that day, and the ice, which covered all the pools during the night of the 7th, warned them that the summer, so short in these arctic regions, was already passed, and winter approaching! From this moment it continued to freeze regularly every night. The coast however was not yet reached, and what would not be the difficulties of the return, when, in order to arrive at regions, if not inhabited, at least occasionally visited by nomadic tribes, they would have to stem the current whose rapidity they so well knew? Besides the fear of perishing of hunger in these dreadful deserts, they would, by delaying their return much longer, run the risk of being hemmed in by the ice. Under these circumstances M. Middendorf gave the most admirable proof of courage and perseverance, for he continued his route, though nothing as yet indicated the proximity of the sea.

Once, and once only, since leaving the promontory they had discovered some indications of these wilds having been before visited by man—this was on the 9th of August. A mammoth's tusk, sawed into three pieces, a fragment of the handle of a hatchet, a piece of wood partly charred, and the jawbone of a horse, found

upon the bank, seemed to prove that Laptieff and his companions had halted here. The next day they perceived on the bank of the river the skeleton of a mammoth, still well preserved, and, what they considered a valuable discovery, two trunks of trees, which the waves had thrown up.

The influence of the tide was now felt, and the boat was rapidly hurried on by the combined force of the stream and the ebb, when at last, on the 12th of August, M. Middendorf perceived in the distance, by the aid of his glass, an immense block of ice. Increasing their efforts, they hailed this appearance with joy; and although they soon had to struggle against the flood-tide, they ultimately reached the sea where it forms a deep gulf, extending towards the north. What had been taken in the distance for a block of ice was a very large mass of quartz, pushed up probably by the waves* at the flooding of the river, and hitched on a rocky islet: a quantity of floating timber was strewn on the shore.

Animated by success, the intrepid traveller prepared the next day to put to sea, in order to reach a promontory which rose to the east of them; but a contrary wind and shallows forced them to return in lat. 76°; and M. Middendorf having lost a few moments in observing some seals that were swimming in great numbers round the boat, it was not without great difficulty that they succeeded in gaining the islet where they had passed the preceding night.

It was easy to foresee that the return would be yet more harassing and dangerous than their progress to the sea. Unwholesome and insufficient food, excessive labour and difficulties almost insurmountable, had exhausted the strength of the travellers; above all, the necessity of frequently jumping into the cold water, either to disengage the boat from a shoal on which it had grounded, or in order to reach the bank which these same shoals prevented from being otherwise approached, had greatly impaired the health of the party; more particularly as for more than a month they had been obliged to forego even the shelter of a tent during the night, the size of the boat not allowing them to carry so bulky an object. In such a state of weakness none were able to handle an oar for any length of time; they could only reckon, therefore, on their sails for ascending the stream, the navigation of which had become so much the more difficult as the Taimyr had fallen 6 feet during the last few days. The weather was getting every hour more severe, the nights cold and dark; the river on both sides was fringed with ice, and the boat, covered with it, had become heavier.

Fortunately the wind, now blowing from the N.E., continued favourable, and the travellers rejoiced that a strong wind, to which

* More probably deposited by ice.—Ed.

they set every sail, enabled them to stem two of the rapids which the Samoyedes had told them of, and which otherwise it would have been impossible for them to ascend. Such is the nature of the streams in these regions, that, in descending, they had not even perceived these rapids. In this rigorous climate, where the soil remains continually frozen to a depth much greater than that of the rivers, these latter are not supplied by any springs; in the spring the beds of these torrents are filled to the brim by the melting of the snow; the stream then bears along such a large volume of water, and its surface is raised to such a height, that it is quite level, notwithstanding the irregularities of its bottom; but as soon as these floods have rolled away and the level of the water has sunk, this is no longer the case.

At the end of six days the expedition reached the cavern where they had before rested. On this occasion they halted there in order to repair the boat, which, having been cast against a rock in a squall, had lost its rudder; fortunately they had wood for the purpose, having picked up a quantity on the sea-beach.

Four days later they had reached the northern extremity of Lake Taimyr, and being close-hauled in order to double a little island, the waves broke over the boat, and compelled M. Middendorf to run her on a bank; the clothes of the travellers, steeped in water, froze upon them, and in this state they had to wait four days till the tempest had somewhat subsided. Neither fishing nor hunting could be very productive under such circumstances. The pains of hunger were severely felt; and on the 27th, M. Middendorf, having ascended a hill near the shore of the lake, distinctly perceived by his glass a white band which stretched across the water. This discovery was well calculated to excite alarm; no time was to be lost, and accordingly the next morning they again proceeded, in the hope of being able to coast along the western shore; but the boat was soon stopped by that fatal barrier of ice which M. Middendorf had seen in the distance the day preceding.

The direction was immediately changed: it was thought that, perhaps, the part of the lake through which the river runs might still be free of ice, and accordingly an endeavour was made to reach this only channel of safety. But a dead calm had succeeded the storm, and the travellers perceived, with no small surprise, that the water, through which the boat was passing, became so rapidly covered with ice that the surface froze, so to say, immediately behind the boat as it advanced. The danger of being hemmed in by the ice in the middle of the lake now became imminent; there was no time to be lost; it became urgent to reach immediately the nearest shore at all hazards. It was now remembered, that in one part the barrier of ice had been observed to have

but a trifling breadth, and that the open water, which had been seen beyond, appeared to extend to the western shore. Having therefore gained this point, a passage was effected by breaking the ice with hatchets and the oars; and the boat was only a few fathoms from the open water, when, to the inexpressible terror of the travellers, the whole mass of ice began to move, the canoe, which had been taken in tow, was crushed in an instant, the boat's rudder was carried away, and she leaked all over; they, however, succeeded in floating her into clear water, but the efforts of the crew, increased by the greatness of the danger, were hardly sufficient to keep her clear of the floating shoal, which continued to follow them, threatening destruction every moment. At the very instant of reaching the shore the boat was caught by the ice; with difficulty the cargo was saved, and when, afterwards, the boat was hauled up, it was found that her side was stove in.

Thus did the boat-wrecked party find themselves without provisions, at a great distance from those they had buried higher up, far from all succour, and in the midst of bare rocks upon a desert shore. The only hope now left was that of falling in with some Samoyedes, but this hope must have appeared almost chimerical. They did not however lose courage; the wreck of the boat served them for constructing a sledge, and they proceeded. Unfortunately the rocks, over which they had to pass, were not yet covered with snow, and the sledge, destroyed by the friction, was broken before they had hardly gone 3 verstes.

The next day, the 30th of August, M. Middendorf, worn out with anxiety and the excessive fatigue of the last few days, was taken seriously ill, and felt it to be impossible for him to follow his companions. He shared with them a small remainder of portable soup, which he had kept as a last resource, and then they were compelled, not without regret, to kill their faithful hunting dog that had been so useful during the expedition; even the blood of this animal was not disdained; his flesh was divided into five portions; and thus provided, M. Middendorf ordered his four companions to go in search of the Samoyedes in the desert, and if possible to bring him assistance.

As for himself, he remained alone, ill, without shelter at the approach of an arctic winter, under the 75th parallel of latitude, and exposed to all the inclemency of the weather. He remained thus for 18 days, a fact without a parallel in the history of travels. Fortunately he found himself in some degree sheltered by the snow which the wind had piled up; and during the last three days, whilst a violent storm lashed the plain with fury, he remained buried under the snow, and to this circumstance he no doubt owes his life. At length, no one coming to his assistance, he felt assured that his companions had perished; at times he was seized with

horror at the idea that his dreadful situation would deprive him of reason. At last a happy crisis took place, and he felt again the desire of living. With some fragments of wood that were near him he managed to light a fire, sufficient to melt a little snow; into this water he poured some spirit of wine in which an object of natural history was preserved; this reanimated him a little, and after so many sleepless nights he was able to sleep. On his awaking he was fortunate enough to take a white partridge; a small sledge was soon constructed, and, having made himself a pair of boots with a part of his pelisse, he started in the hope of being, perhaps, able to reach the spot where the provisions were deposited when they came down the river.

Forced to stop very frequently, he had not gone far when, on the slope of the mountains, he perceived three black specks which appeared to move; he went towards them; they were men, being one of his companions and two Assia-Samoyedes, his friends, who were coming with a sledge to save him. His people had succeeded in crossing over the ice of the lake instead of going round, and, thanks to this circumstance, they had met with the Samoyedes the fourth day; but since then the arctic storms, whose violence surpasses all that can be imagined, had prevented their again penetrating northward.

On the 19th of September M. Middendorf was again under the tent that had been set up on the border of the Upper Taimyr. The objects of natural history which had been collected were carefully packed up; on the 28th they quitted, at the same time with the wandering tribes, these polar regions; on the 8th of October they hailed with joy the first trees, and the next day the travellers found themselves once more in the hut of the Boganida.

M. Branth had made, during their absence, very complete collections of the products of the country; the meteorological observations had been continued during seven months. Thus the object of the expedition has been carried out more fully than was anticipated, and, as M. Von Baer says, in his memoir on this journey, "the hut on the Boganida will become an important point in researches on the distribution of organic life on the surface of the globe."
